BPI - Buffer Pool Initialization

This Natural profile parameter is for mainframes only.

It is used to assign buffer pools to a Natural session. It corresponds to the NTBPI macro in the parameter module NATPARM.

There are several types of buffer pools for different purposes. It is possible to define backup buffer pools (see examples below). If a buffer pool is unavailable, Natural tries to setup a backup buffer pool of the same type with the next higher sequence number.

Possible settings	See Keyword Subparameters, below.	Possible subparameter keywords: TYPE | SEQ | NAME | SIZE | CSIZE | LIST | TXTSIZE | METHOD | C64
Default setting	TYPE=NAT,SEQ=0,NAME=' ',SIZE=256, CSIZE=0,TXTSIZE=4,METHOD=S, C64=OFF	
Dynamic specification	YES	The parameter BPI can only be specified dynamically. In NATPARM, use the macro NTBPI.
Specification within session	NO	

The subparameters SIZE, CSIZE, TXTSIZE METHOD and C64 do not apply to global buffer pools. These subparameters are honored for the very first session only which initializes a local buffer pool.

The following topics are covered below:

- BPI Parameter Syntax
- NTBPI Macro Syntax
- Keyword Subparameters
- Examples of NTBPI Macros
- Examples of BPI Parameter

BPI Parameter Syntax

The BPI parameter is specified as follows:

```
BPI=(TYPE=type,SEQ=n,NAME=name,SIZE=nnn,LIST=name,TXTSIZE=n,CSIZE=nn,METHOD=x,C64=xx)
```

- To dynamically deactivate a buffer-pool definition, use the special value OFF as follows:
  `BPI=(TYPE=type,SEQ=n,OFF)`
- If OFF is used, it must be specified after TYPE and SEQ. OFF is not allowed for the macro NTBPI.
- If you use the BPI parameter to overwrite an existing buffer pool definition in the parameter module, you must specify new settings in all those subparameters which are to be changed; if you do not, the old settings will still be used.
  If, for example, you want to change from a global to a local buffer pool, you must specify: `NAME=' '`.
- If you use the BPI parameter to dynamically add a new backup buffer pool definition, you must specify a sequence number (SEQ) for it.
  If you omit the SEQ specification, the definition of the primary buffer pool (SEQ=0) will be overwritten.
- The NAME, SIZE, LIST, TXTSIZE, CSIZE, METHOD and C64 specifications for the primary buffer pool

(SEQ=0) can also be set dynamically with the profile parameters BPNAME, BPSIZE, BPLIST, BPTEXT, BPCSIZE, BPMETH and BPC64.

NTBPI Macro Syntax

The NTBPI macro is specified as follows:

```
      NTBPI TYPE=type,                          *
            SEQ=n,                              *
            NAME=name,                          *
            CSIZE=nnn,                          *
            SIZE=nnn,                           *
            LIST=name,                          *
            METHOD=x,                           *
            C64=xx,                             *
            TXTSIZE=n
```

Keyword Subparameters

TYPE | SEQ | NAME | SIZE | CSIZE | LIST | TXTSIZE | METHOD | C64

TYPE - Type of Buffer Pool

Determines the type of the buffer pool. Possible types are:

NAT	Natural buffer pool (this is the default). For general information on the Natural buffer pool, see Natural Buffer Pool (in the Natural Operations for Mainframes documentation). *
DLI	DL/I buffer pool. *
EDIT	Software AG Editor buffer pool. Alternatively, an editor auxiliary buffer pool can be defined per session, see also the profile parameter EDPSIZE.
SORT	Sort buffer pool. *
MON	Buffer pool for Monitor function of SYSTP utility.
SWAP	Buffer pool to hold the Natural CICS swap pool.

* **Note:**
Buffer pools of the types NAT, DL/I or SORT can be managed with the utility SYSBPM.

SEQ - Sequence Number of Buffer Pool

Determines the sequence number *n* of the buffer pool.

The buffer pool defined with the lowest sequence number is called primary buffer pool. For every buffer pool type, except TYPE=SWAP, you can define one primary buffer pool and one or more backup buffer pools; that is, alternative buffer pools (of the same type, but with a different sequence number) which will be used if the primary buffer pool is not available at session initialization or cannot be allocated.

Buffer pools of the same type are sorted in order of sequence numbers (should two pools of the same type have the same sequence number, they will be sorted in the order in which they are specified). If a requested buffer pool is not available, the buffer pool of the same type with the next higher sequence number will be used instead. If that one is

not available either, the one with the next higher number will be used, etc.

Possible values	0 to 9
Default value	0

NAME - Name of Global Buffer Pool

Applies only to global buffer pools and pools of TYPE=SWAP only.

Determines the *name* of the global buffer pool. For a local buffer pool, the *name* is blank. For TYPE=SWAP, name is the swap pool name which is the key of the associated swap pool definitions in the Natural system file FNAT or FUSER, see parameter SWPINIT (in the Natural Operations for Mainframes documentation, section Natural Swap Pool Initialization Control).

Possible values	1 to 8 characters
Default value	' '

The NAME specification can be overridden dynamically with the profile parameter BPNAME (with TYPE=NAT only).

Under Com-plete:
Under this TP monitor system, a global buffer pool is not possible, but only a local editor buffer.

SIZE - Size of Buffer Pool

Applies to local buffer pools only. Determines the size *nnn* of the buffer pool.

Possible values	100 to 2097151 (KB)
Default value	256

The SIZE specification can be overridden dynamically with the profile parameter BPSIZE (with TYPE=NAT only).

CSIZE - Size of the Local Buffer Pool Cache

Applies to local buffer pools of TYPE=NAT and TYPE=SWAP under OS/390 and VSE/ESA only (not for Com-plete).

It determines the size of the buffer pool cache in KB.

Possible values	0, 100 to 2097148 (that is, 2 GB - 4 KB) for cache in data space, that is, with C64=OFF.
	0, 100 to 58720256 (that is, 56 GB) for cache "above the bar", that is, with C64=ON.
	Note: The specified value is rounded to the next 4 KB boundary for a data space cache and to the next 1 MB boundary for a memory object cache. If the value specified exceeds the possible maximum value, the possible maximum value will be taken instead.
Default value	0 (that is, no buffer pool cache is used).

For more information see Buffer Pool Cache.

The CSIZE specification can be overridden dynamically with the profile parameter BPCSIZE (with TYPE=NAT only). To determine the type of storage for the buffer pool cache, subparameter C64 can be used.

LIST - Name of Preload List to be Used

Applies only to local buffer pools of TYPE=NAT.

Determines the *name* of the preload list to be used for this buffer pool.

Possible values	1 to 8 characters
Default value	The default is blank (that is, no preload list is to be used).

For general information on preload lists, see Preload List. Preload lists are maintained with the SYSBPM utility as described in the section Debugging and Monitoring.

The LIST specification can be overridden dynamically with the profile parameter BPLIST.

TXTSIZE - Size of Buffer Pool Text Segments

Applies to local buffer pools of the following types:

- TYPE=NAT
- TYPE=SORT
- TYPE=DLI

Determines the size *n* (in KB) of the buffer pool text segments.

Possible values	1, 2, 4, 8, 12, 16 (KB)
Default value	4.

In multi-user environments (for example, under CICS), the TXTSIZE specification only affects the very first Natural session which initializes the local buffer pool.

Under BS2000/OSD: The parameters SEQ, NAME and SIZE are ignored.

The TXTSIZE specification can be overridden dynamically with the profile parameter BPTEXT (with TYPE=NAT only).

METHOD - Search Algorithm for Allocating Space in Buffer Pool

Applies to local buffer pools of TYPE=NAT only.

Determines the algorithm for allocating storage in the buffer pool.

Possible values	S	This indicates that a selection process is to be used for allocating storage. The selection process consists of browsing the whole buffer pool directory and comparing different entries in order to find the most suitable entry. This method was formerly known as Algorithm 1+2.
	N	This indicates that the next available unused or free space is to be used. The search for the next available space is done from a pointer to directory entries which moves in a wrap around fashion. This method may be used in combination with a buffer pool cache.
Default value	S	

The METHOD specification can be overridden dynamically by profile parameter BPMETH.

C64 - Type of Buffer Pool Cache Storage

Applies to local buffer pools of TYPE=NAT under z/OS only (not for Com-plete).

Determines the type of storage to be used for the buffer pool cache.

Possible values	ON	This indicates that a memory object "above the bar" (that is, in 64-bit memory) is to be used for the buffer pool cache. Note that C64=ON is only honored if the prerequisites are met, namely: • z/ architecture hardware, • operating system z/OS Version 1.2 or higher. If the prerequisites are not met, the default value is taken.
	OFF	This indicates that a data space is to be used for the buffer pool cache.
Default value	OFF	

A buffer pool cache is used only if BPI subparameter CSIZE or profile parameter BPCSIZE is set to a non-zero value. The C64 specification can be overridden dynamically by profile parameter BPC64.

Examples of NTBPI Macros

```
NTBPI TYPE=NAT,SEQ=0,NAME=NATBP1
NTBPI TYPE=NAT,SEQ=1,NAME=NATBP2
NTBPI TYPE=NAT,SEQ=2,SIZE=1000,METHOD=N
```

These examples define multiple Natural buffer pools. If the global buffer pool NATBP1 is not available, the global buffer pool NATBP2 will be used instead. If the latter is not available either, a local buffer pool with a size of 1000 KB will be used.

Examples of BPI Parameter

```
BPI=(NAME=' ',SIZE=2000,METHOD=N)
```

The primary buffer pool is replaced by a local buffer pool of 2000 KB. This definition is equivalent to:

```
BPNAME=' ',BPSIZE=2000,BPMETH=N
```

```
BPI=(SEQ=0,NAME=LBP1),BPI=(SEQ=1,NAME=LBP2),BPI=(SEQ=2,SIZE=500)
```

First, Natural tries to allocate a global Natural buffer pool with the name "LBP1"; if this buffer pool is not found, it tries to allocate "LBP2"; if this is not found, it allocates a local buffer pool with a size of 500 KB.

```
BPI=(SEQ=0,TYPE=EDITOR,NAME=LBPE1),BPI=(SEQ=1,TYPE=EDITOR,SIZE=500)
```

First, Natural tries to locate a global editor buffer pool with the name "LBPE1"; if this is not found, it allocates a local editor buffer pool with a size of 500 KB.

```
BPI=(TYPE=SWAP,SIZE=500,NAME=SWAPPOOL,CSIZE=2000)
```

A Natural local swap pool named "SWAPPOOL" having a size of 500 KB and a cache size of 2000 KB is allocated.